

Application No. 10/008,987

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A method for mirroring data using two controllers in a storage system, comprising:

providing a first message comprising a write mirror message that includes metadata relating to data to be mirrored by a first controller to a second controller and in which said first message including said metadata is not greater than 128 bits, with said first message being part of a first mirroring operation, wherein said first message is generated by said first controller, and wherein said first message comprises an initial notification message; and

continuing with said first mirroring operation after said providing a first message by providing a second message comprising a data mirror message that includes user data to said second controller ~~wherein no messages other than said first and second messages are provided by said first controller to said second controller as part of said first mirroring operation.~~

2. (Previously Presented) A method, as claimed in Claim 1, further comprising:
prior to said providing a first message, determining that data associated with said first mirroring operation is not greater than a predetermined number of bytes.

3. (Original) A method, as claimed in Claim 2, wherein:
said determining step includes ascertaining by said first controller that said data associated with said first mirroring operation is no greater than 32 Kbytes.

4. (Original) A method, as claimed in Claim 2, wherein:
said first controller communicates with a second controller using a Small Computer System Interface (SCSI) protocol and in which said predetermined number of bits in said message relates to said Small Computer System Interface (SCSI) protocol.

5. (Canceled)

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6. (Previously Presented) A method, as claimed in Claim 1, wherein:
said continuing step includes sending a write complete message related to completion of said first mirroring operation.

7. (Previously Presented) A method, as claimed in Claim 1, further comprising:
determining that second data associated with a second mirroring operation has a greater number of bits than a predetermined number of bits and sending an additional message to said second controller that does not include metadata.

8. (Canceled).

9. (Previously Presented) A method, as claimed in Claim 1, wherein:
said first message causes a first interrupt to said second controller and the minimum number of interrupts to said second controller for said first mirroring operation is three interrupts.

10. (Currently Amended) A method for mirroring using two controllers in a storage system, comprising:

making a determination related to contents of a first message with a first controller, wherein said first message is to be sent by said first controller to a second controller as part of a first mirroring operation, and wherein said first message is a message providing a first notification to the second controller that data will be mirrored to the second controller; and

producing said first message having contents that depends on said making step, wherein[[],]:

1) when said making step determines that data to be sent comprises is less than or equal to a predetermined number of bits, said first message includes metadata information for user data associated with the first mirroring operation; and

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2) when said making step determines that said data is greater than said predetermined number of bits, at least less than all of said metadata associated with said first mirroring operation is not included with said first message.

11. (Previously Presented) A method, as claimed in Claim 10, further comprising:
sending said first message to said second controller and recognizing said message by said second controller including whether said first message includes said metadata.

12. (Canceled)

13. (Previously Presented) A method, as claimed in Claim 10, wherein:
said first message causes a first interrupt to said second controller when said first message includes said metadata, with said first interrupt being one of three interrupts and said three interrupts being the minimum number of interrupts for said first mirroring operation.

14. (Original) A method, as claimed in Claim 10, wherein:
said first controller communicates with said second controller for said first mirroring operation using Small Computer System Interface (SCSI) protocol and said predetermined number of bits depends on SCSI protocol operations.

15. (Currently Amended) An apparatus for mirroring data using two controllers in a storage system, comprising:

a first controller that generates one of a first message and a second message depending on an amount of data to be sent by said first controller to a second controller as part of a first mirroring operation, wherein said first message is sent in response to determining that said amount of data to be sent by said first controller is less than or equal to a predetermined number of bytes, wherein said first message comprises metadata related to user data included in said first mirroring operation; and

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a second controller that receives said data from said first controller, wherein when said first or second message is sent by said first controller said first or second message comprises an initial notification message to said second controller related to the first mirroring operation.

16. (Previously Presented) An apparatus, as claimed in Claim 15, wherein:

said first message includes all metadata for said first mirroring operation and said second message includes at least less than all of said metadata for said first mirroring operation and in which said one of said first message and said second message is the first communication from said first controller to said second controller for said first mirroring operation.

17. (Original) An apparatus, as claimed in Claim 15, wherein:

said first message includes metadata and the number of bits in said first message relates to SCSI protocol.

18. (Original) An apparatus, as claimed in Claim 15, wherein:

said first message includes metadata and command related information and said first message is no greater than 128 bits.

19. (Original) An apparatus, as claimed in Claim 15, wherein:

when said second message is generated, metadata is sent to said second controller after an interrupt that is different from the interrupt associated with said second message.

20. (Original) An apparatus, as claimed in Claim 15, wherein:

when said first message is generated, said first mirroring operation is associated with a first number of interrupts and, when said second message is sent, said first mirroring operation is associated with a second number of interrupts, with said second number of interrupts being greater than said first number of interrupts.